

Serial No. 09/847,989
December 18, 2003
Reply to the Office Action dated December 18, 2002
Page 2 of 7

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (canceled)

Claim 2 (currently amended): A ~~surface acoustic wave device according to Claim 1, wherein the transducer contains~~ A surface acoustic wave device utilizing a Shear Horizontal wave, comprising:

a piezoelectric substrate; and
an interdigital transducer provided on the piezoelectric substrate, the interdigital transducer including at least three metal layers containing at least two of the first layers made of a metal with a density of about 15 g/cm³ or more as a major component and at least one second layer made of a metal with a density of about 12 g/cm³ or less, the volume of said first layer being in the range from about 20% to about 95% of the total volume of the interdigital transducer.

Claim 3 (currently amended): A surface acoustic wave device according to Claim 42, wherein the metal with a density of at least about 15 g/cm³ constituting the first layer as a major component is one of Au, W, Ta, and Pt.

Claim 4 (currently amended): A surface acoustic wave device according to Claim 42, wherein the metal with a density of up to about 12 g/cm³ constituting the second layer as a major component is one of Ni, Cr, Cu, Al, and Ti.

Claim 5 (currently amended): A surface acoustic wave device according to Claim 42, wherein, in the layers that are within a range of thickness of up to approximately one-fourth of the total thickness of the interdigital transducer measured from the surface

Serial No. 09/847,989
December 18, 2003
Reply to the Office Action dated December 18, 2002
Page 3 of 7

of the piezoelectric substrate of the metal layers constituting the interdigital transducer, the first layer has a volume of at least 50% of the total volume.

Claim 6 (currently amended): A surface acoustic wave device according to Claim 12, wherein in the layers each having a thickness of at least about one-twentieth of the total thickness of the interdigital transducer in the metal layers constituting the interdigital transducer, the layer located nearest to the piezoelectric substrate is the first layer.

Claim 7 (currently amended): A surface acoustic wave device according to Claim 12, wherein the first layer is arranged at the surface of the interdigital transducer.

Claim 8 (previously presented): A surface acoustic wave device according to Claim 16, wherein in the interdigital transducer, the layer containing Au as a major component has a volume of from about 40% to about 80 % of the overall volume, and the layer containing Ni as a major component has a volume of from about 20% to about 60% of the overall volume.

Claim 9 (previously presented): A surface acoustic wave device according to claim 17, wherein in the interdigital transducer, the layer containing Au as a major component has a volume of from about 20% to about 50% of the overall volume, and the layer containing Al as a major component has a volume of from about 50% to about 80% of the overall volume.

Claim 10 (currently amended): A surface acoustic wave device according to claim 12, further comprising reflectors are arranged on both of the sides of the IDT.

Serial No. 09/847,989
December 18, 2003
Reply to the Office Action dated December 18, 2002
Page 4 of 7

Claim 11 (original): A surface acoustic wave device according to claim 10, wherein the reflectors are grating type reflectors, and have the configuration in which the plurality of electrode portions each are short-circuited in both of the ends thereof.

Claim 12 (original): A surface acoustic wave device according to claim 10, wherein portions of the IDT where the reflectors are located have a propagation constant that is different from that of the remaining portion of the IDT.

Claim 13 (original): A surface acoustic wave device according to claim 10, wherein the first layer includes a Ti film and the second layer includes an Au film.

Claim 14 (original): A surface acoustic wave device according to claim 10, wherein the IDT has a four layer structure.

Claim 15 (original): A surface acoustic wave device according to claim 14, wherein the four layer structure of the IDT includes films of Ti, Au, Ni, and Au.

Claim 16 (currently amended): A surface acoustic wave device according to Claim 42, wherein a first of the at least three layers includes Au as a major component and a second of the at least three layers includes Ni as a major component.

Claim 17 (currently amended): A surface acoustic wave device according to Claim 42, wherein a first of the at least three layers includes Au as a major component and a second of the at least three layers includes Al as a major component.